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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| EXAMINER |
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| ART UNIT | PAPER NUMBER |
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DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

07/03/94

Applicant(s)

F. J. De

Examiner

MICHAEL G. LEE

Group Art Unit

2276

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 C.F.R. 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 6/21/92 (Amend)
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 111; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1 - 21 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1 - 21 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- Claim(s) _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

- The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- The drawing(s) filed on _____ is/are objected to by the Examiner.
- The specification is objected to by the Examiner.
- The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- received in Application No. (Series Code/Serial Number) _____
- received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 Other _____

Office Action Summary

Part III DETAILED ACTION

Prelim. Amdt./Amendment

1. Receipt is acknowledged of the Amendment filed 21 June 2000.

Claim Objections

2. Claim 7 is objected to because of the following informalities:

Re claim 7, line 2: Substitute "ship" with -- chip --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation to "wherein said two-dimensional barcode pattern is as formed on said semiconductor chip by photolithography".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

5. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merlin et al in view of Shamir.

Merlin et al teaches a semiconductor device 1 having some mark patterns thereon 20 for information management provided at each of chips arrayed on a wafer surface [11, 12, 13] as chip ID information wherein the chip ID information includes chip information inherent to each chip (see the English abstract; and the figures).

1 Re claims 1, 4, 7, 11, 14, and 16: Inasmuch as Merlin et al teaches of marking the wafer surface with one or
2 more indicia, he is silent with respect to the ID information to be in a two-dimensional barcode pattern.

3 Shamir teaches an IC wafer including a micro-barcode indicia 128 and an alphanumeric indicia 130 for
4 identification and for inventory purposes (see fig. 9A; and col. 11, lines 53+).

5 It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the
6 notoriously old and well known micro-barcode pattern(s) as taught by Shamir in addition to the indicia as taught by
7 Merlin et al in order to record more data/information on the wafer surface for better inventory purposes (see col. 11,
8 lines 55- of Shamir). Accordingly, such modification would have been obvious extension for recording more data on
9 the wafer surface as taught by Merlin et al as modified by Shamir, and therefore an obvious expedient. Moreover, to
10 substitute the one-dimensional micro-barcode with a two-dimensional micro-barcode would have simply been
11 considered a mere duplication of elements as taught by Merlin et al as modified by Shamir, and therefore an obvious
12 expedient.

13 Re claims 3 and 13: One of ordinary skill in the art at the time the invention was made to employ the
14 conventional means for "chip ID information is projected and exposed using a liquid crystal mask that is capable of
15 changing a light transmitting pattern for each exposure" to the teachings of Merlin et al Shamir in order to provide
16 Merlin et al Shamir with a more secure system/device wherein the ID information cannot be detected by a naked eye.
17 Furthermore, to record ID information as discussed above would have been an alternative means for recording
18 data information on or onto the wafer surface, and therefore an obvious expedient as taught by Merlin et al Shamir.

19 Re claims 4, 7, 14, and 16: Although, Merlin et al as modified by Shamir teaches the means for encoding the
20 ID information on the wafer surface of the semiconductor device, Merlin et al/Shamir is silent with respect to means for
21 providing ID information on a lead frame and/or outer surface of a resin-sealed semiconductor chip. However, one of
22 ordinary skill in the art at the time the invention was made would have contemplated in placing/recording the ID
23 information on a semiconductor device on each chip, either on the chip itself, on a lead frame, outer surface of resin-seal,
24 and etc. due to the fact that such modification would have constituted an alternative means for placing/recording the two

1 dimensional barcode patterns on a semiconductor device at different locations, and therefore would have constituted an
2 obvious design variation, failing to provide any unexpected results, well within the ordinary skill in the art.

3 Re claim 21: With respect to the two-dimensional barcode pattern is formed by means of photolithography,
4 Merlin et al as modified by Shamir is silent, however, it is notoriously old and well known in the art to print, etch by
5 means of photolithography, coat, attach, etc. of an indicium on a substrate are commonly done and are well known in the
6 semiconductor chip industry/manufacturing means. Therefore, to employ the photolithography means to the teachings of
7 Merlin et al as modified by Shamir would have been an obvious expedient, failing to provide any unexpected results,
8 well within the ordinary skill in the art. Furthermore, such modification would have been an obvious extension as taught
9 by Merlin et al as modified by Shamir.

10
11 ***Response to Arguments***

12 6. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new
13 ground(s) of rejection.

14 Merlin et al as modified by Shamir meets the claimed limitation as set forth in the instant application, as
15 discussed above.

16 For the reasons stated above, the Examiner believes that a proper prima-facie case of obviousness has been
17 established. Therefore, the Examiner has made this Office Action final.

18
19 ***Conclusion***

20 7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.
21 Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension
22 of time policy as set forth in 37 CFR 1.136(a).

23 A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the
24 mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final
25 action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period,

1 then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee
2 pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,
3 will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4 8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Drexler (US
5 4,917,292), Drexler (US 4,835,376), Drexler (US 4,692,394), and Drexler (US 4,542,288) discloses the means and the
6 method of etching the indicia by means of photolithography.

7 9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to
8 **Michael G. Lee** whose telephone number is (703) 305-3503. The examiner can normally be reached between the hours
9 of 5:30AM to 2:00PM Monday thru Friday.

10 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald T. Hajec,
11 can be reached on (703) 308-4075. The fax phone number for this Group is (703)308-7722, (703)308-7724, or
12 (703)308-7382.

13 Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which
14 otherwise require a signature, may be used by the applicant and should be addressed to [michael.lee@uspto.gov].

15 *All Internet e-mail communications will be made of record in the application file. PTO employees do not*
16 *engage in Internet communications where there exists a possibility that sensitive information could be identified or*
17 *exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35*
18 *U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the*
19 *Patent and Trademark on February 25, 1997 at 1195 OG 89.*

20 Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to
21 the Group receptionist whose telephone number is (703) 308-0956.

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MICHAEL G. LEE
Primary Examiner

Technology Center 2800
JULY 25, 2000